The Seven Deadly Sins of Disaster Recovery

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Abstract:

Disaster response is largely about managing people. Human failings and vice can delay or derail library and archives recovery activities, causing irreparable damage to irreplaceable cultural property. Peter Waters' seven requirements for conducting successful disaster recoveries are contrasted with the Seven Deadly Sins to demonstrate the timeless nature of subversive factors at work in the disaster domain. Disaster planning is recommended as an indispensable alternative to running in circles.

Key Words: Peter Waters, Florence flood, disaster plan, recovery protocol, library, archive.

Introduction

Speed and effectiveness of the human response following a disaster are the most

critical variables affecting the condition of an institution's collections in the aftermath of the recovery. Meeting the situation's shifting requirements calls for a well-conceived emergency response plan and people capable of competently implementing it. The loss of environmental controls and waterlogged collections that often accompany a disaster will continue to actively damage cultural materials until they can be stabilized. Time is of the essence; the pressures that ensue are often unique, complex, and destructive.

Disaster plans, when they exist--and only 20% of all U.S. collecting institutions have a written disaster plan[1]--are often drawn up by people with little or no firsthand experience in the recovery of water-soaked collections, and are likely to cause further problems upon implementation. And yet, effective disaster planning continues to be avoided--perhaps understandably. After all, planning for a disaster is essentially mapping a trip to hell, and who in good conscience wants to contemplate that adventure?

In practice, the unexpected is inherent in every disaster. They elicit variable human responses and are difficult to anticipate when drafting a disaster plan in the relative comfort of a dry office. Some people will rise to the occasion, others won't, and the suspension of normalcy can open up a subterranean experience not unlike the one in Lewis Carroll's *Alice in Wonderland.*

Mr. Carroll provides a glimpse of this world following the flood created by Alice's own tears when she was nine feet tall. Shrunken to a tiny height and drenched along with the other creatures, Alice and her companions readily acquiesced to the bedraggled Dodo's suggestion to convene a hastily concocted "Caucus Race" to dry out, though none of the party understood exactly what this entailed. The race, with its veiled reference to political campaigns, began by plotting a route "in a sort of a circle." Each of the participants was randomly "placed along the course, here and there." With no precise starting point, the racers simply "began running when they liked and left off when they liked." Under the Dodo's tutelage, a gentle, aerobic pandemonium ensued until "they had been running half an hour or so, and were quite dry." At this point, "the Dodo suddenly called out 'the race is over!'" The party came to rest. Panting breathlessly, each pressed the Dodo, quizzically asking, "but who has won?"[2]

Who indeed. A truth embodied in Mr. Carroll's frenetic tale is that the Dodo--a voice of authority in an unfamiliar situation--exerted control because the good natured troupe was caught off-guard, unprepared to act. While the immediacy of his response was laudable, was air drying by physical perambulation the most effective solution, even in Wonderland? Is running in circles after a disaster really an optimal response?

When dealing with historic, culturally significant, or potentially irreplaceable collections this question becomes critical, and the answer, it turns out, is largely dependent upon the capability and insights of the person directing the recovery. In 1995, Peter Waters, the father of modern book conservation in the United States and the recovery coordinator for the Biblioteca Nazionale immediately following the devastating Florence flood of 1966, defined seven essential requirements for successful recovery.[3] Having participated in numerous extremely large library and archive disasters throughout his career, Waters' observations remain poignantly insightful today.

In fact, it is telling to contrast Waters' seven characteristics for recovery success with the Seven Deadly Sins, that Fourth Century metaphor of human weaknesses[4] that describes an array of personal failings still undermining society today. More than a decade since Waters' remarks were first made public, unexpected problems continue to point to the unforeseen pitfalls that inhabit real disaster situations--chief among them, the individual shortcomings of the participants themselves.

I. Sloth

Mr. Waters' first determinant for a successful recovery of cultural property, **"[t]he degree of human reaction and responsiveness under stressful conditions,"**[5] is easily undermined by Sloth, the sin of laziness.

People's ability to act decisively in stressful circumstances will largely decide the success or failure of a response, and institutional response rates can be delayed. For example, if directors and assistant directors are away from the office, out of town, or otherwise unreachable, the subordinate staff's hands are tied if they have not been pre-authorized to make decisions on their behalf. A variation on this problem is the normally dynamic director who becomes psychologically paralyzed by the immediate impact of the event and is incapable of making critical, rational decisions. The scenario of the "walking wounded" is far more common than one might suspect, and post traumatic stress (PTS) syndrome can incapacitate one person while leaving another unaffected even though both people witnessed the same event.

A well-conceived disaster response plan needs a 24/7 telephone tree and the ability to accommodate uncertainty by pre-establishing criteria for implementing alternative chains of command. Well before an emergency occurs, it is eminently desirable to identify and train a calm, well-organized person and his or her backup to take responsibility of the recovery process, and to delegate to them the authority needed to make expeditious decisions. This is especially useful in the case of an insightful director who knows he or she is far better suited to tasks such as talking with the media or addressing bureaucratic exigencies. It is also appropriate to establish a training

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regimen for everyone on staff, so, as with responses to fire alarms, institutional emergency response protocols become automatic.

Pre-selecting a trustworthy commercial disaster recovery firm and identifying one or more conservators experienced in disaster recovery to act as consultants significantly improves an institution's ability to move forward quickly. A conservation consultant will provide timely insights about which technical options are most appropriate, establish cost projections, and act as the institution's advocate in discussions with the commercial recovery firm and insurance adjusters (when insurance coverage is available), thus ensuring the collection receives appropriate treatment from stabilization until it is returned to the shelves. Commercial disaster recovery firms are capable of marshaling large amounts of labor quickly and are trained through experience to expeditiously implement recovery strategies. A timely response in a highly charged situation is critical, but, as Mr. Waters suggests, the leader's effectiveness and technical expertise will be key to his or her success.

If the response is neither timely nor effective, the institution's financial stability can be severely jeopardized long after the disaster, even in the nonprofit world of higher education. One year after the 1994 earthquake at California State University, Northridge, students--although initially tolerant about attending classes outdoors and,

later, in temporary accommodations--began transferring to other universities to regain access to basic academic amenities such as classrooms, laboratories, and a library. This departure left California State Northridge increasingly under-funded, slowing the rate of building repairs, and initiating a downward economic spiral that ultimately threatened to bankrupt the entire university.[6] Learning from this example, Colorado State University, after its campus-wide flood in 1997, implemented a free daily shuttle service to transport students and faculty to and from other regional libraries. It also acquired the newly developed Ariel technology to provide electronic document delivery directly to departmental offices all over campus, significantly decreasing user dissatisfaction during the two years spent restoring the library's building and repairing 425,000 damaged books.[7]

II. Envy

Mr. Waters' second crucial element for a successful disaster recovery, **"[t]he emergence of a leader who is able to handle the situation, can create order out of chaos and has the strength and courage to act decisively without fear of future recrimination,"**[8] may come to blows with Envy, the begrudging self-interest that seeks to illegitimately undermine a leader's success.

An effective disaster response coordinator may be the institution's director or

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someone within the institution's ranks who has the director's support. This person must be capable of making snap decisions carefully and conducting the recovery cost-effectively. The longevity of every damaged item in the collection hangs in the balance. To succeed, it is helpful if the disaster response coordinator has strong convictions, a sense of humor, and a tolerance for abuse because when the accusations begin, a resilient constitution is an indispensable shield.

Every step of the way, the leader's work can be supported or hampered by people within the very institution she or he is striving to serve. Conflicting priorities, while not always illicit, can also lead to contentious problems. Following the fire at the Royal Saskatchewan Museum in Regina, Canada in 1990,[9] conservators realized that handling soot-coated organic materials before they were cleaned caused the soot particles to become deeply embedded within the object's surface. Administrators, however, hastened to reopen the building to patrons. The smoke damaged collection was hurriedly moved offsite to accommodate building restoration with the result that some objects became far more difficult or impossible to clean. As a consequence, parts of the collection were ruined.

Another example includes the laying of traps to derail the career of Emanuale Cassamasima, Director of the Biblioteca Nazionale in Florence. In 1966, Cassamasima,

a charismatic, pivotal leader and a scholar with a deep and abiding passion for books, was also a Communist engaged locally in the pursuit of social justice. At the time of the flood, his superiors in Rome were so antagonistic towards him because of his political persuasion that when he asked for emergency help they simply failed to respond to his communications. Rather than risk the total loss of the library's collection by delaying, Cassamasima diverted his acquisitions budget to pay for the immediate transport and drying of the library's wet books.

Lacking explicit permission from his superiors in Rome, this act amounted to insubordination, threatening Cassamasima's ongoing employment. Immediate international intervention in the form of American, Australian, and British aid buoyed him up to persist in the work of building a restoration lab that ultimately employed over 100 Italians trained to the highest conservation standards by Peter Waters, Tony Cains, Chris Clarkson, and Don Etherington, among others. Over the next three years, ongoing foreign charity permitted Cassamasima to persevere until his supervisors conceded. Their attempted retribution through the unethical exercise of authority was narrowly averted because the events in Florence were played out on a world stage. Cassamasima's moral conviction is all that prevented the total loss of nearly 1.5 million books, at least 90,000 of them rare.[10]

III. Greed

Mr. Waters' third requirement for a successful recovery concerns **"[t]he actual methods used to determine an assessment of loss and damage leading to a plan of action which ultimately affects the costs of reclamation, replacement and restoration."**[11] This assessment is easily skewed by self interest, greed, or avarice once the rules of normal commerce, including competition, have temporarily been suspended.

The most egregious example of this occurs when disreputable recovery companies inflate prices, insist on providing nonessential services, or produce poor quality workmanship to profit from the confusion that dominates the disaster domain.

This predatory environment can be modified dramatically by carefully pre-selecting a disaster response company long in advance of the event. By initiating a formal Request for Proposal (RFP) process and inviting reputable companies to participate,[12] current price ranges for comparable services can be established. While past pricing cannot be applied directly to future market conditions, nor the specific scope of work needed be known in advance, the RFP process offers institutions insight into the basic cost structure of disaster recovery services. This evaluation must go

beyond fiscal considerations, however, and probe the quality of performance received from the client's perspective, an issue that will require a bit of sleuthing. The RFP can contain a request for disclosure about past customer satisfaction, with the accuracy of these statements substantiated through direct contact with the clients. However, untrustworthy companies are not likely to list dissatisfied customers among their references. Additional information about a firm's past performance can be gleaned through personal conversations with seasoned conservation consultants able to provide direct observations from the field or indiscretions they are aware of but are not at liberty to publish.

When one or more insurance companies are involved in a recovery, it is in their best interest to keep recovery costs as low as possible. This fiscal conservatism often includes adjusters applying pressure to encourage early settlement, ostensibly to expedite the recovery process but in point of fact to "fix" recovery limits before unexpected factors crop up to inflate the bottom line.

In the first days following the Colorado State University library flood, the institution's emphasis was on packing out and freezing the collection to stabilize it as quickly as possible. It was difficult then to anticipate the degree to which mold would

become a factor. But, the 14 days required to transport 425,000 sodden books to an out-of-state commercial freezer plant caused rampant mold growth. It took months of subsequent investigation to determine the long-term human health risks posed by such a huge concentration of mold, whether sterilization was required, and if so, which technique was most appropriate (information sorely lacking in the library disaster recovery literature). Not surprisingly, the primary insurer tried to settle the claim as early as the third day into the recovery, long before the additional cost of sterilization was even a remote possibility.

This sort of problem also crops up when a disaster recovery contractor negotiates a bonus for completing the restoration by a specified date. Again, at Colorado State University, the administration interpreted the inclusion of this contractual clause as meeting their need to quickly normalize university operations and, after much debate, agreed to the stipulation. In practice, however, this contingency provided the contractor with an incentive to cut corners. After three months, this author, as conservation consultant, called for a reevaluation of the protocol for dealing with the library's mold problem, as the university's exposure seemed palpable. In turn, the university called for an independent assessment to ascertain whether vacuum freeze drying and rebinding without sterilization was adequate or whether sterilization or replacement of the

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library's 20th century collection was a more appropriate option. Peter Waters and Norbert Baer were commissioned to provide this second opinion and their conclusion corroborated this consultant's concerns. However, both consultants' concerns were summarily ignored by the contractor,[13] who continued implementing his original recovery protocol. It was only through the intervention of microbiologist Doug Rice and recovery specialist Larry Wood that an economical sterilization protocol using gamma radiation was developed, and the university overruled the contractor's objections.[14]

Monitoring the actions of this type of disaster contractor is in the best interest of both the institution and the insurance company involved in the loss, but even the people hired to provide this type of oversight must be closely scrutinized. Independent disaster contractors comprise a very small group; when one is hired by an insurance company to look out for its fiscal interests, they are essentially being paid to scrutinize the work of a close professional peer. In practice, these personal ties create more than a casual conflict of interest. The overseer has reason to support a colleague's decisions because on subsequent jobs, these two may well reverse their roles.

IV. Gluttony

Mr. Waters' fourth criterion for success following a disaster is **"[t]he degree to**

which management can develop strategies to cope with untimely, insistent and inaccurate media reporting."[15] The glut of media attention brought on by the disaster can reinforce or seriously undermine an institution's credibility. Causes of misinformation include: well-meaning but ill-informed staff who inaccurately report the cause or extent of damage; reporters who rely on popular rumor rather than fact; or appropriate authorities who do not thoroughly disclose the institution's situation in a timely fashion.

An institution's media releases must be accurate, truthful, and to the point. Responsibility for these reports should rest with one key person within the organization. No matter how grim the news, public support can be rekindled by timely, consistent updates that can generate support, both during and after the crisis.

V. Anger

Fifth among Mr. Waters' requirements for a positive outcome is the leader's **"[l]evel of determination and strength of character to continue the recovery process while being confronted by negative criticism from those who seek to find someone to blame for the catastrophe."**[16] To be effective, the disaster recovery coordinator must exude personal integrity and discharge their duties dispassionately

with a clear absence of anger.

Identifying the root cause of a disaster may seem like a step toward preventing similar events from reoccurring in the future, but ultimately solving the immediate crisis can't be accomplished through blame or anger. In the 2002 Prague flood, governmental authorities announced that the Vltava River's impending rise would be relatively insignificant. Placated by this information, museum administrators took no steps to safeguard or relocate their collections. Three days later their holdings were submerged in Prague's most destructive flood of the millennium. Describing these events a year later, museum personnel remained angry beyond words, betrayed by the incompetence of politicians who, in an effort to avoid panic, chose to suppress early warnings available from the region's river monitoring technology.[17] Energy focused on this misleading public announcement, however, did nothing to rectify the still devastated situation.

A conservation consultant hired to advise on recovery protocols is not immune from similar frustrations pouring out from all affected parties. His or her character will be sorely tested by people who may inadvertently or intentionally create obstacles to undermine the recovery effort. Misdirected anger from a single influential person can

rapidly turn the tide of opinion against a consultant and reduce his or her status to that of an interloper, or even a scapegoat. While this behavior may seem irrational, it should be remembered that vilifying the stranger is a common human trait. Good Samaritan laws in the U.S. were drafted, after all, to protect the well-intentioned efforts of those providing emergency medical assistance to people regardless of the success of the action or the victim's feeling about the competence of the intervention.

The conservation consultant must remain vigilant and confront attempts aimed at subverting the recovery effort. Inevitably, the collection will be scarred by the event and all parties need to acknowledge from the outset that their hard work is going to produce a less-than-ideal outcome. Disasters occur within a preexisting social and political environment that may prove as complex to comprehend as the technical challenges required to stabilize, dry, and repair damaged collections. The consultant's recommendations must remain consistent and credible if they are to be effective.

In the aftermath of Hurricane Katrina, this author joined the efforts of HEART, the Heritage Emergency Assistance Recovery Teams organized by the American Association for State and Local History and the American Institute for Conservation. On 26 September, 2005 we visited the Old Spanish Fort Museum in Pascagoula,

Mississippi. This one-room local museum had been inundated by approximately two feet of standing water, and had not been opened up in the six weeks following the storm. An oozy layer of mud covered the museum's floor, and both standing water and collections remained inside locked exhibit cases, the surface of most organic objects thick with five or six varieties of active mold nurtured by the lack of air movement. Despite swollen wooden window frames, the HEART team pried open the tiny museum's six double-hung windows to create a bit of cross ventilation and informed the elderly curator and his volunteer assistant that their artifacts needed outside airflow to dry or they would continue to mold. We then moved on to assess other damaged institutions.

Visiting the Old Spanish Fort Museum one week later, the second HEART team discovered tightly closed doors and windows, re-sealed by the elderly curator and his assistant concerned about vandalism despite the museum's rural location. Again, the building was opened up to encourage air movement, but when the third team arrived the following week the museum was once more hermetically sealed with the mold bloom frenetically engulfing the collection. This obstinance could have driven the team to a display of anger had the situation not been so pitiable.

Remaining sympathetic is key to relating to the trauma people are experiencing at a personal level. Not all attempts to assist can succeed, but ideally, a mutually productive meeting of the minds can improve the situation's evolving exigency. Above all, everyone involved should strive to remain positive, supportive, and flexible to take advantage of developing opportunities.

VI. Lust

Mr. Waters' sixth universal condition affecting the recovery's success, **"[t]he methods used to prepare and dry material which directly and irreversibly affect post recovery costs,"**[18] is a consideration easily linked with the Lust for money.

Some commercial disaster recovery firms routinely overcharge for services in addition to selling customers treatment options than are actually unnecessary. Being unfamiliar with the protocols necessary to address their collection's needs, most disaster victims are implicitly vulnerable to accepting inflated prices from unscrupulous contractors. After the flood occurred at Colorado State University, the contractor listed in the library's disaster plan was immediately hired, with no agreement on pricing in place. On the third day of the recovery, the head of the firm set a figure of $1.5 million

to pack out the library--that is, to box and transport the wet books to a commercial freezer plant. This disclosure led to an emergency meeting with the university's president and his cabinet where this consultant estimated the pack out to be worth approximately one fourth that amount. In an unprecedented course correction, the president fired the first firm and, better informed, appointed an alternate to immediately take over the entire job.

Most disaster victims, however, rely on their contractor's expertise for guidance, leaving them vulnerable to being misled or fiscally devastated. Unscrupulous business practices are a product of the carnivorous atmosphere that can permeate the post-disaster environment where relationships are short-lived. Unsettled conditions accompanying the recovery period make it easy for people who are so inclined to prey on the disadvantaged through larcenous business dealings.

Well-intentioned but badly conceived treatment protocols can also drive up recovery costs and cause significant and irreversible collection damage. Following the 1966 Florence flood, when freezers were unavailable as a means of fending off mold growth, mud-laden books were immediately dried in commercial brick and tobacco curing kilns before conservators had a chance to intervene. A seemingly expeditious

solution to the immediate problem, thermal drying caused the paper's gelatin sizing and the book's animal glue spine lining adhesives to migrate to the surface of each page, leaving many books baked dark brown and brittle. This outcome required that each book be taken apart section-by-section and washed to remove the scorched gelatin, a treatment regimen that dramatically increased recovery costs. Today, thermal drying is also known to damage cellulose, reducing paper strength by approximately 15%.[19]

Moreover, if sterilization is required, the choice of technique is significant in terms of paper permanence. For example, mold on Colorado State University's 425,000 water-damaged books was sterilized using gamma radiation in 1997, an experimental technique for cultural property. Although economically viable and efficient, gamma radiation in doses large enough to destroy mold spores is now recognized to cause polymer scission, reducing cellulose strength by approximately 25%.[20] This irreversible condition ultimately reduced the permanence of the material treated, underscoring the importance of choosing recovery methods that are technically appropriate for the job at hand.

VII. Pride

Finally, Mr. Waters' seventh measure of disaster recovery success, **"[t]he**

willingness of an administration to openly share a recovery experience with others who are interested in developing a disaster preparedness plan,"[21] is an act of humility that stands in stark contrast to the Pride preventing full and open disclosure of mistakes that negatively impact a recovery. If made public, lessons learned--however embarrassing--can inevitably help others avoid similar pitfalls.

In 1986, my first disaster recovery was initiated by a slow leak in a wet-pipe fire suppression system at the LDS Church's Family History Library that had gone undetected for weeks because it occurred above a compact shelving unit in a little-used part of the collection. I was part of a group of responding conservators who performed a "textbook" recovery. Several thousand books were rapidly packed spine down into plastic milk crates and moved via a human chain to vans waiting at the library's loading dock where they were whisked off for freezing in a local Salt Lake City ice plant. The recovery went like clockwork. When the team left that afternoon, every person was extremely elated by what had been successfully accomplished in a matter of hours. Two weeks later, however, we learned that the Hygea Ice Plant, the facility where the books had been taken for freezing, had burned! This eventuality is one I have never seen discussed in the disaster recovery literature and it provides an extremely sobering lesson about the capriciousness of life and the universal constant--that "anything that can go

wrong, will" (Murphy's Law in the U.S.; Sod's Law in the U.K.)--even after a disaster.

Another example was shared by a Czech conservator following the 2002 Prague flood. The basement of the Pinkas Synagogue, one of the complex of buildings comprising the Jewish Museum in Prague's historic Jewish quarter, filled with water. The first reaction of museum officials was to bail out the synagogue's basement, which was summarily accomplished. What appeared to be a straight forward decision turned out to be ill-conceived however, a fact that was not clearly understood until after the work was completed. Because of the vast reach of the flood, water pressure throughout Prague was impacted. The decision to remove the water from the synagogue's basement did not take into account the source of this water, which originated from a spring fed, fresh water well that constantly replenished the synagogue's mikva (a ceremonial bath for women). Once this clean water was removed, pressure from tons of standing water surrounding the building forced sewage to back up into the synagogue's basement, displacing the fresh water. The hubris of pride--assuming the full extent of a complex problem can easily be understood--actually contributed to making a bad situation far worse.[22]

Fear of recrimination or public humiliation often prevents institutions from

sharing these types of miscalculations with colleagues. Honest, self-critical disclosure that identifies problems contributing to the disaster or inadequacies leading to a flawed recovery can help institutions reach closure in terms of resolving the disquieting consequences of a catastrophic event.

Equally important, other cultural repositories can learn from these hard-won lessons if we take the opportunity to help raise professional awareness. It is also important to note that pride can come before a fall and may lead to an institution's willingness to reject offers of assistance in times of emergency--to "go it alone." Stories of whole collections being discarded after a flood or a fire are disconcerting but are not uncommon; reaching out for help should be an institution's first response to a disaster affecting its collection.

Conclusion

No form of collection recovery can ever reverse the consequences of catastrophic damage. Thus, the best form of disaster response is prevention. Vital to preventing or mitigating potential devastation, all collecting institutions are well advised to invest the time and energy necessary to draft, implement, and update a disaster plan. This includes attention to the diverse guises of human weakness that can subvert an

institution's best laid plans. Individual or corporate transgressions and misconduct represented by the classic seven deadly sins--Sloth, Envy, Greed, Gluttony, Anger, Lust, and Pride--are all likely to surface during an event large enough to disrupt normal patterns of commerce and social interaction.

Ultimately, a collecting institution's success in responding to a disaster will hinge on one simple precept: the speed and effectiveness of the reaction can decide the fate of the collections. Irreplaceable cultural property must be stabilized as quickly as possible as wet organic material will soon mold, some inks and dyes will run, and partially dried coated paper and photographic emulsion can block together. The efficacy of the recovery can be significantly improved if certain facts are understood *a priori*. If the collection contains irreplaceable artistic, historic, or cultural works, precautions should be implemented *beforehand* to properly house (box) valuable or fragile material to minimize potential water damage and prevent breakage. As possible, these objects should be stored above the high water line (the 500-year flood plain). A network of conservation consultants should be established in advance to ensure the institution can draw upon technical expertise immediately as needed. And, these consultants need to be experienced in handling large-scale disasters and highly skilled in material-specific drying techniques pertinent to the institution's holdings.

Finally, like all other work-related activities, disaster response turns out to be largely about managing people. Efforts to familiarize institutional staff with disaster recovery protocols and to involve authorities from the university, city, county, and state (including the local fire department) in the planning process will pay off should a real disaster strike. Pre-selecting a reputable professional disaster recovery firm and authorizing several people within the institution to contact it if its services are ever required is a proactive and responsible step. Making agreements in advance with local and regional venders can also streamline the process of procuring requisite materials and services such as paperboard boxes, plastic garbage can liners, transport vehicles, and freezer space.

Disaster planning may indeed be mapping a trip to hell, but heaven help the organization that has to make that journey bereft of a plan. While Peter Waters' seven basic prerequisites for success in the recovery field seem simple enough, in practice, they are subject to being undermined by human frailty and vice, as he was well aware. Investing in the disaster planning process is one way institutions can preempt potential problems--for the dubious, however, running in circles may still suffice.

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Randy Silverman has participated in emergency response efforts following Hurricane Katrina in Mississippi under the aegis of the American Institute for Conservation (AIC) and the American Association for State and Local History (2005); University of Hawaii at Manoa flood (2004); and Colorado State University Library at Ft. Collins flood (1997). He took part in the AIC "Train the Trainers Disaster Workshop" (2000), team-taught the AIC "Regional Emergency Preparedness Seminar" in Seattle (2001), and will team-teach a component of three national, week-long "Collections Emergency Response Training" workshops held under the aegis of the AIC (2007). He has lectured on disaster response and preparedness for UNESCO (South Korea, 2006); Bulgarian National Library (2006); International Gathering on Tsunami and Archives (Indonesia, 2006); Association of Caribbean University, Research and Institutional Libraries (Trinidad, 2004); and Czech and Slovak Library Information Network (Czech Republic, 2003).

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